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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,868	07/09/2003	Han-Ming Lee		9125

7590
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EXAMINER

RIELLEY, ELIZABETH A

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,868	LEE, HAN-MING	
	Examiner	Art Unit	
	Elizabeth A. Rielley	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: the recitation "As a result, despite the heat dissipation of said chip, the temperature of said bulb does not increase, prolonging the life of said bulb" is directed to a purpose and not a distinct feature of the invention. The claim should also be incorporated into one single sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamada (US 2003016720) in view of Lin et al (US 20040070333) in further view of West (US 2528849) and in further view of Dorsey (US 2825040).

In regard to claim 1, Kamada ('720) teaches an LED stem structure having a brace-end of the stem (104) being connected to the supportive chip cup disk (102); the center is concave so as to form a holding chamber whose inner diameter is open (see figure 1a), the stem brace (104) is equipped with a molybdenum alloy wire (106; paragraph 133) which takes a 180° turn at an appropriate location so that said tip hooks and presses against the surface of chip (see figure 1a). Kamada does not teach that the inner

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diameter of the holding chamber is arc-shaped and circular, the arc-shaped slope of the inner circumference of the disk has a circular groove pointing toward the upward, open cathode disk, the wire's end is tapered off to form the tip, and the bulb is in a vacuum state. Lin et al ('333) teaches the inner diameter of the holding chamber is arc-shaped and circular (figure 5F; paragraph 32) and the bulb is in a vacuum state (paragraph 51). This vacuum state would that naturally facilitate efficient circulation and therefore heat absorption. Lin et al also teaches the wire taking an 180° turn (figure 11). It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Kamada's ('720) LED stem structure to Lin et al's ('333) shaped holding chamber in order to improve emission angles. West ('849) teaches an electrode discharge device that the arc-shaped slope of the inner circumference of the disk (70, 69, 19; figure 2) has circular groove (22) pointing toward the upward, open disk (23). It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Kamada's ('720) LED stem structure and Lin et al's ('333) shaped holding chamber to West's ('849) holding configuration in order to produce a more stable holding structure for the LED. Dorsey ('040) teaches the ends of a holding wire to be tapered off in order to avoid undue stress on the LED chip (column 2 lines 22-51). It would have been obvious at the time of the invention to one of ordinary skill in the art to combine Kamada's ('720) LED stem structure and Lin et al's ('333) shaped holding chamber and West's ('849) holding configuration to Dorsey's ('040) tapered wires in order to avoid undue stress on the LED chip.

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3. In regard to claim 3, Lin et al ('333) teaches the gradient of the disk (571-573) enables said chip to generate light that reacts at different angles, giving rise to a wide-angle, open, homogeneous light source (990; figure 5g). Motivation for combining is the same as above.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamada ('720) in view of Lin et al ('333) in further view of West ('849) in further view of Dorsey ('040) and in further view of Baker (US 2489850).

5. Kamada ('720)/Lin et al ('333)/West ('849)/Dorsey ('040) teach all the limitations set forth, as described above, except the tip of the molybdenum alloy wire may point-press against said chip in a normal state in response to the temperature-dependent expansion feature or contraction (non-illumination) feature of said chip, because of the elastic coefficient of the barb-turning angle of said molybdenum alloy wire. Baker ('850) teaches the temperature produced by the operation of a lamp triggers the expansion of a holding feature (104), which then allows proper cathode support (column 4 lines 47-64). It would have been obvious at the time of the invention to modify Kamada ('720)/Lin et al ('333)/West ('849)/Dorsey ('040)'s LED in view of Baker's ('850) holding feature in order to avoid undue stress on the LED chip.

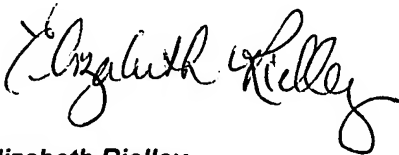
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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Rielley

**Examiner
Art Unit 2879**

usage 1/10/05
Mariceli Santiago
AU 2879